Thank you for buying this Pioneer product.
Please read through these operating instructions so you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.
In some countries or regions, the shape of the power plug and power outlet may sometimes differ from that shown in the explanatory drawings. However, the method of connecting and operating the unit is the same.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT NOTICE
[For U.S. and Canadian models]

The serial number for this equipment is located on the rear panel. Please write this serial number on your enclosed warranty card and keep it in a secure area. This is for your security.

[For Canadian model]
CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION: POUR PREVENIR DES CHOCS ELECTRIQUES EN PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGA-TEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

Note to CATV system installer
This reminder is provided to call the CATV system installer's attention to Article 820-22 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

LINE VOLTAGE SELECTOR SWITCH

Only multi-voltage models are provided with this switch. U.S., Canadian, European, U.K., and Australian models are not provided with this switch. Mains voltages in Saudi Arabia are 127 V and 220 V only. Never use this model with 110 V setting in Saudi Arabia.

You will find the line voltage selector switch on the rear panel. Before your model is shipped from the factory, the switch is set to the power requirements of the destination; nevertheless, you should check that it is set properly before plugging the power cord into the AC outlet. If the voltage is not properly set, or if you move to an area where the voltage requirements differ, adjust the selector switch as follows. Before adjusting, disconnect the power cord.

1. Provide yourself with a medium-size screwdriver.
2. Using the screwdriver turn until the arrow points to the voltage level of your area.
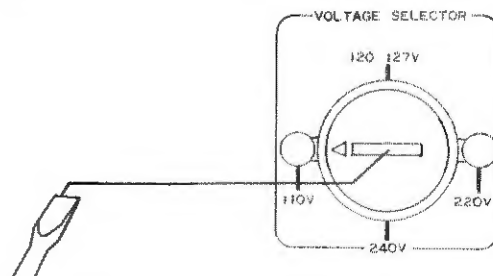
Medium-size screwdriver

IMPORTANT

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT

If the apparatus is fitted with AC mains power outlet(s), see REAR PANEL FACILITIES for convenient connection of additional Hi-Fi component(s). Make all connections to the AC outlet(s) and the signal terminals first. Connect the plug to the wall socket last (make sure that the power switch is off.)

FOR USE IN THE UNITED KINGDOM

The wires in this mains lead are coloured in accordance with the following code:
  Blue: Neutral
  Brown: Live
As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured marking identifying the terminals in your plug proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red
Do not connect either wire to the earth terminal of a three pin plug.
Equipment sold in the U.K. is not supplied with a power plug.

SAFETY INSTRUCTIONS

READ INSTRUCTIONS — All the safety and operating instructions should be read before the appliance is operated.

RETAIN INSTRUCTIONS — The operating instructions should be retained for future reference.

HEED WARNING — All warnings on the appliance and in the operating instructions should be adhered to.

FOLLOW INSTRUCTIONS — All operating and use instructions should be followed.

WATER AND MOISTURE — The appliance should not be used near water — for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

LOCATION — The appliance should be installed in a stable location.

WALL OR CEILING MOUNTING — The appliance should not be mounted to a wall or ceiling.

VENTILATION — The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

HEAT — The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

POWER SOURCES — The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

POWER-CORD PROTECTION — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

POLARIZATION — If your purchased product is provided with a polarized power plug, please read the following instructions. This product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

CLEANING — The appliance should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzine, insecticides or other volatile liquids since they may corrode the cabinet.

POWER LINES — An outdoor antenna should be located away from power lines.

NONUSE PERIODS — The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

OBJECT AND LIQUID ENTRY — Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

DAMAGE REQUIRING SERVICE — The appliance should be serviced by a Pioneer authorized service center or qualified service personnel when:
● The power-supply cord or the plug has been damaged.
● Objects have fallen, or liquid has been spilled into the appliance.
● The appliance has been exposed to rain.
● The appliance does not appear to operate normally or exhibits a marked change in performance.
● The appliance has been dropped or the enclosure damaged.

SERVICING — The user should not attempt to service the appliance beyond that described in the operating instructions. For all other servicing, contact the nearest Pioneer authorized service center.

OUTDOOR ANTENNA GROUNDING — If an outside antenna is connected to the antenna terminal, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges.

In the U.S.A. section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Fig. A.

CART — An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.
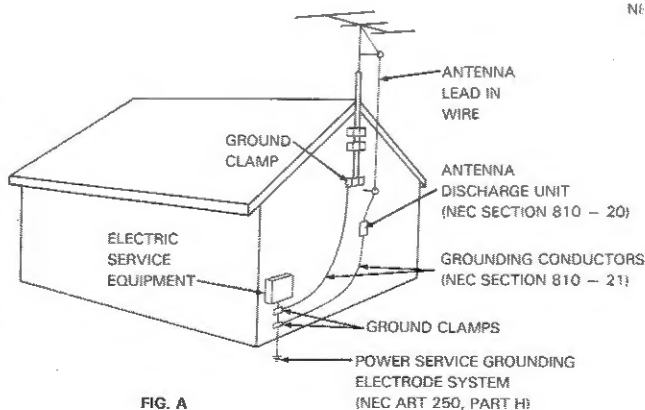

NEC — NATIONAL ELECTRIC CODE

ANTENNA LEAD IN WIRE
GROUND CLAMP
ANTENNA DISCHARGE UNIT (NEC SECTION 810 — 20)
ELECTRIC SERVICE EQUIPMENT
GROUNDING CONDUCTORS (NEC SECTION 810 — 21)
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250, PART H)

FIG. A

CONTENTS

FEATURES

High Receivability.

- A new-type front end for improved ability to eliminate interference.
- New-type IF circuitry provides improved selectivity.
- New-type MPX noise reduction delivers high sound quality.

High Specification

- High S/N ratio, low distortion, and superior separation with the D.D.D. (Digital Direct Decoder) Type IV.

High Sound Quality

- FDNR type audio stage L.P.F.
- Anti-vibration design features such as the honeycomb chassis.
- Spectrum Simulated Stereo lets you enjoy a stereo effect with monaural sources.

High Controllability

- Direct access tuning function.
- Fine tuning function.
- Auto operation function.
- 40-station random presets incorporating CLASS function.
- Two sets of output jacks for fixed or adjustable output level.

CONFIRM SUPPLIED ACCESSORIES

AM loop antenna
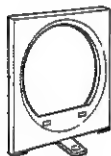
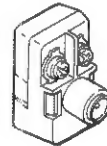FM T-type antenna
- For U.K. model

- For other destination models

Connecting cord with pin plugs

Control cord *

Antenna adaptor *
300 Ω — 75 Ω

* Not attached on U.K. model

CHANNEL STEP/FM DE-EMPHASIS SWITCH
Only multi-voltage models are provided with this switch.

The unit has been factory preset to the channel allocation and de-emphasis value for the area in which it is to be sold. If these values are set incorrectly, the frequency display may stop at the wrong frequency, or sound may be distorted, resulting in an inability to reproduce reception signals at their proper sound quality. For this reason, be sure to confirm that the values are set correctly before first using the unit.

CHANNEL
STEP

FM
50KHz 100KHz

AM
9KHz 10KHz

50µS 75µS

FM DE-
EMPHASIS
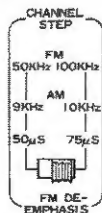
[100 kHz/10 kHz/75 µs] position:
Set to this position for areas with FM reception step of 100 kHz, AM 10 kHz, and de-emphasis 75 µs.

[50 kHz/9 kHz/50 µs] position:
Set to this position for areas with FM reception step of 50 kHz, AM 9 kHz, and de-emphasis of 50 µs.

> **NOTE:**
> When unsure about the channel allocation and de-emphasis values for your area, consult your dealer for correct information.
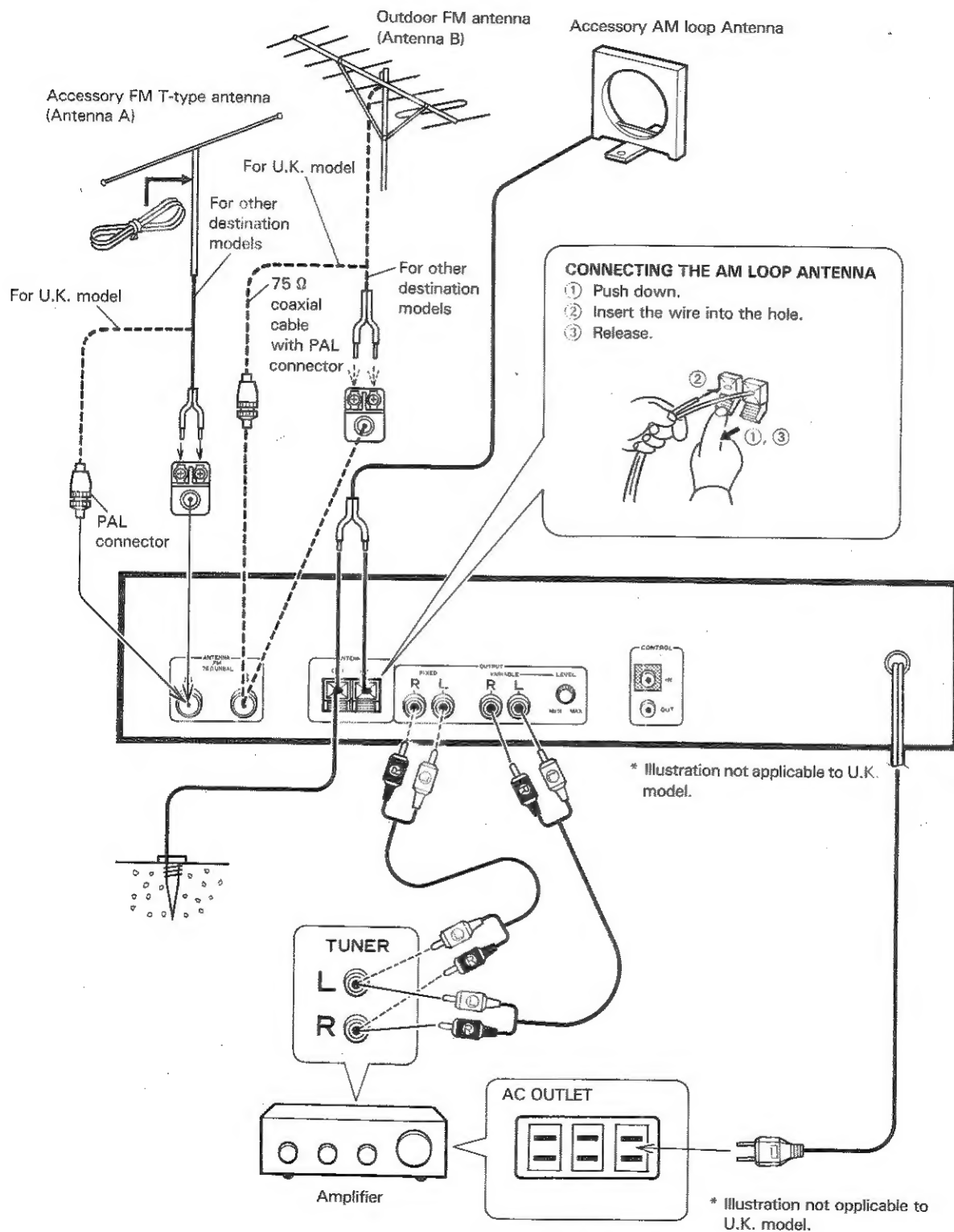
The channel step will not change if this switch is operated with the power ON.
After operating this switch, if you turn the POWER switch OFF and then ON again the channel step will switch over. If you operate this switch, the stations that were memorized before the switch was operated will be erased.

3

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CONNECTIONS

Before making connections, switch off power to the tuner and other equipment to be connected and remove the plugs from the outlets. Switch on power after connections have been made.

CONNECTION EXAMPLE

Outdoor FM antenna (Antenna B)

Accessory AM loop Antenna

Accessory FM T-type antenna (Antenna A)

For U.K. model

For other destination models

For U.K. model

75 Ω coaxial cable with PAL connector

For other destination models

For U.K. model

PAL connector

CONNECTING THE AM LOOP ANTENNA
① Push down.
② Insert the wire into the hole.
③ Release.

* Illustration not applicable to U.K. model.

TUNER

L

R

Amplifier

AC OUTLET

* Illustration not applicable to U.K. model.

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Pin plug Connecting cord

• Connect the white plug to the white terminal (L) and the red plug to the red terminal (R).
• Make sure that there is a proper connection.

Left channel

White plug

Right channel

Red plug
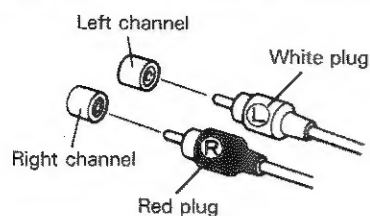
NOTE:
The OUTPUT jacks of this unit are dull tin-plated for high audio quality.

Power Cord Connection

(Not applicable to U.K. model)

As this unit is polarity-wired, the following connection procedure is recommended: Connect the power cord white line side (ground side) to the ground side of a polarity-wired amplifier, or to the longer slot of a wall outlet.
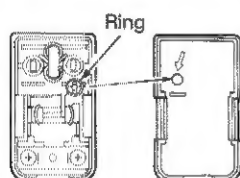
ATTACH THE ANTENNA ADAPTOR (Not supplied in U.K. model)

For 75 Ω coaxial cable

1. Strip off the end of the cable as shown below.
2. Remove the cover.

10
5
5
Unit: mm

Press both sides
at the same time.
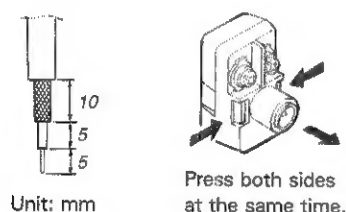
3. Remove the ring. (To convert it into a 75 Ω adaptor.)
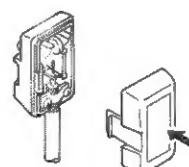
Ring

Place the removed ring on the ring holder on the cover.

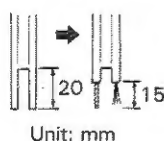4. Connect the cable as shown below.

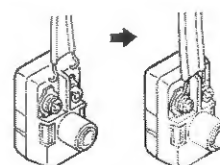Use a screwdriver.
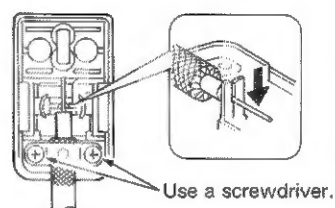
5. Put the cover back on.

For 300 Ω parallel feeder

1. Strip off the insulation of the feeder wire as shown below.

20   15
Unit: mm

2. Connect the wire to the 300 Ω terminal.

Loosen the screws, twine the wire around and tighten the screws.

5
<ARB1328>

ANTENNA CONNECTIONS

Radio reception is not possible unless the antenna is properly connected.

The strength of broadcast signals varies from one area to another. Signal propagation is especially poor in metropolitan areas, where there are many tall buildings, and in mountainous areas. Proper antenna installation is vital to good reception.

AM ANTENNA

The AM loop antenna supplied with the tuner should be connected to the AM antenna terminals. The antenna should be placed at a distance from the tuner, and should not be allowed to touch metallic objects. Avoid placing it near CD players, personal computers, television sets, and other devices generating radio frequencies.

Setting Up the AM Antenna

[Installation Location]
When set on top of a platform, adjust the orientation as shown in Fig. A so that optimum reception is achieved.

[Location for attachment]
When attaching the antenna to a post or wall, first locate a place in which optimum reception can be achieved, then attach as shown in Fig.B, using wood screws.

AM Loop Antenna Set-up

Fig.A   Wood screw   Fig.B
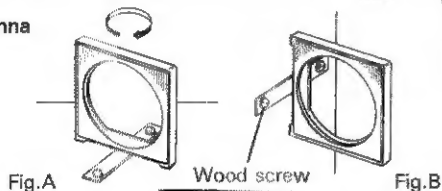
AM Loop Antenna Connection
The accessory AM loop antenna must be connected to ensure proper reception.
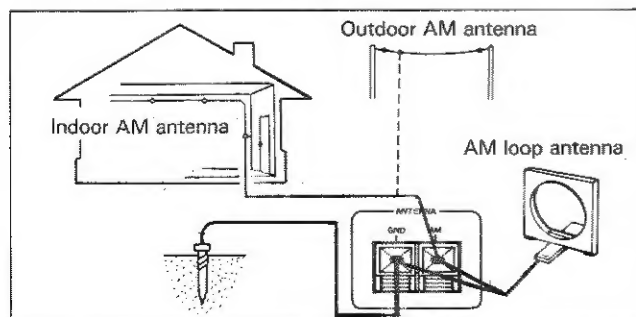

External AM antenna

Indoor AM antenna
Provide a vinyl-coated wire (5 to 6 meters long). Secure one end to the AM terminal and the other end to a wall or other high location.

Outdoor AM antenna
If reception is still poor even when a lead antenna has been stretched out indoors, stretch out a vinyl-coated wire and secure it outdoors.

Connecting the external AM antenna

Outdoor AM antenna

Indoor AM antenna

AM loop antenna

NOTE:
Do not detach the AM loop antenna when using the external AM antenna.

FM ANTENNA

FM T-type Antenna Attachment

Connect the accessory FM T-type antenna to FM terminals. Stretch the antenna out to its full length, and affix it to a wall, etc.

The accessory FM T-type antenna must be connected to ensure proper reception.

Stretch out both ends.

Correct   Wrong   Wrong
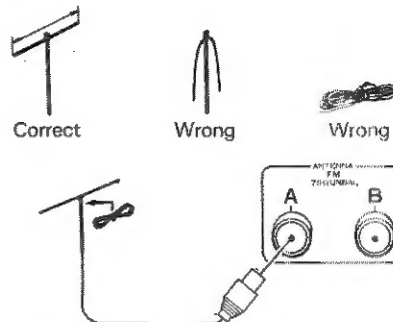
Use the supplied antenna adaptor for U.S., Canadian, and Multi-voltage models (See page 5).

Outdoor external FM antenna installation

Use an external antenna when the signals from the station are weak and cannot be picked up by the accessory T-type FM antenna, or when the sound heard is accompanied by large amounts of noise.

NOTE:
Consult your dealer as to the selection and actual installation of the FM antenna.

Precautions concerning U.S., Canadian and Multi-voltage Models:
If the outdoor antenna's plug is not an F-type, attach the supplied antenna adaptor and then connect.

[U.S., Canadian and Multi-voltage models]
75 Ω coaxial cable with F-type plug.

[U.K. model]
75 Ω coaxial cable with PAL connector
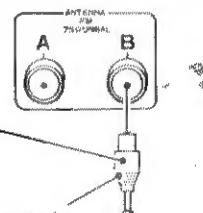
ANTENNA GROUND

Although grounding is not always necessary for reception, it is recommended for protection against damage from lightning if an outdoor FM antenna is used. It is also recommended for reducing noise and hum.

Note:
Never make the ground connection to a gas pipe as sparks could cause the gas to ignite.

Illustration not applicable to U.K. model.
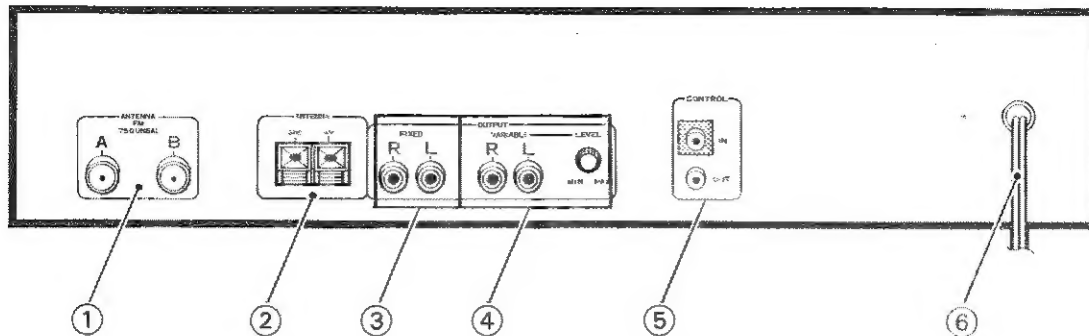
① FM ANTENNA jacks

Connect to the accessory FM T-type antenna cord or a separately purchased FM antenna. There are two jacks, A and B, so you can connect two antennas pointing in different directions towards different broadcasting stations.

② AM ANTENNA terminals

Connect to the accessory AM loop antenna or a separately purchased AM antenna.

③ OUTPUT (FIXED) jacks

Connect to a stereo amplifir's TUNER jacks. Signals are output at a fixed level.

④ OUTPUT (VARIABLE) jacks and LEVEL knob

Connect to a stereo amplifier's TUNER jacks. Signal output level from these jacks is controlled by the level adjustment knob, so you can adjust accordingly to match the level of other components connected to the stereo amplifier.

CONNECTING THE POWER CORD (For U.S. and Canadian models)

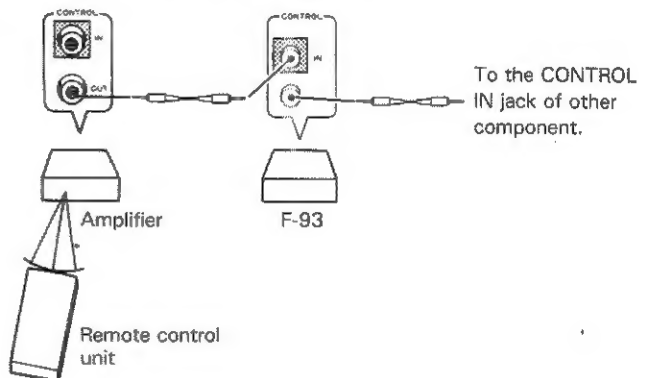Household electrical outlets are provided with specific polarity, a live side and a neutral (ground) side. This unit utilizes such polarity in order to improve sound quality. As shown in the illustration, be sure to insert the power plug so that its blades match the width of slots in the outlet.

Household electrical outlet.

Long slot is neutral (ground) side.

Insert the wide blade into the ground side slot.

⑤ CONTROL jacks (U.S., Canadian and Multi-voltage models only)

IN/OUT jacks for Pioneer remote control signals. The basic functions of this tuner can be operated from the remote control unit supplied with Pioneer amplifiers bearing the 〔SR〕 mark.

To the CONTROL IN jack of other component.

Amplifier   F-93

Remote control unit

⑥ Power cord

POWER-CORD CAUTION

Handle the power cord by the plug. Do not pull out the plug by tugging the cord and never touch the power cord when your hands are wet as this could cause a short circuit or electric shock. Do not place the unit, a piece of furniture, etc,. on the power cord, or pinch the cord. Never make a knot in the cord or tie it with other cords. The power cords should be routed such that they are not likely to be stepped on. A damaged power cord can cause fire or give you an electrical shock. Check the power cord once in a while. When you find it damaged, ask your nearest PIONEER authorized service center or your dealer for a replacement.

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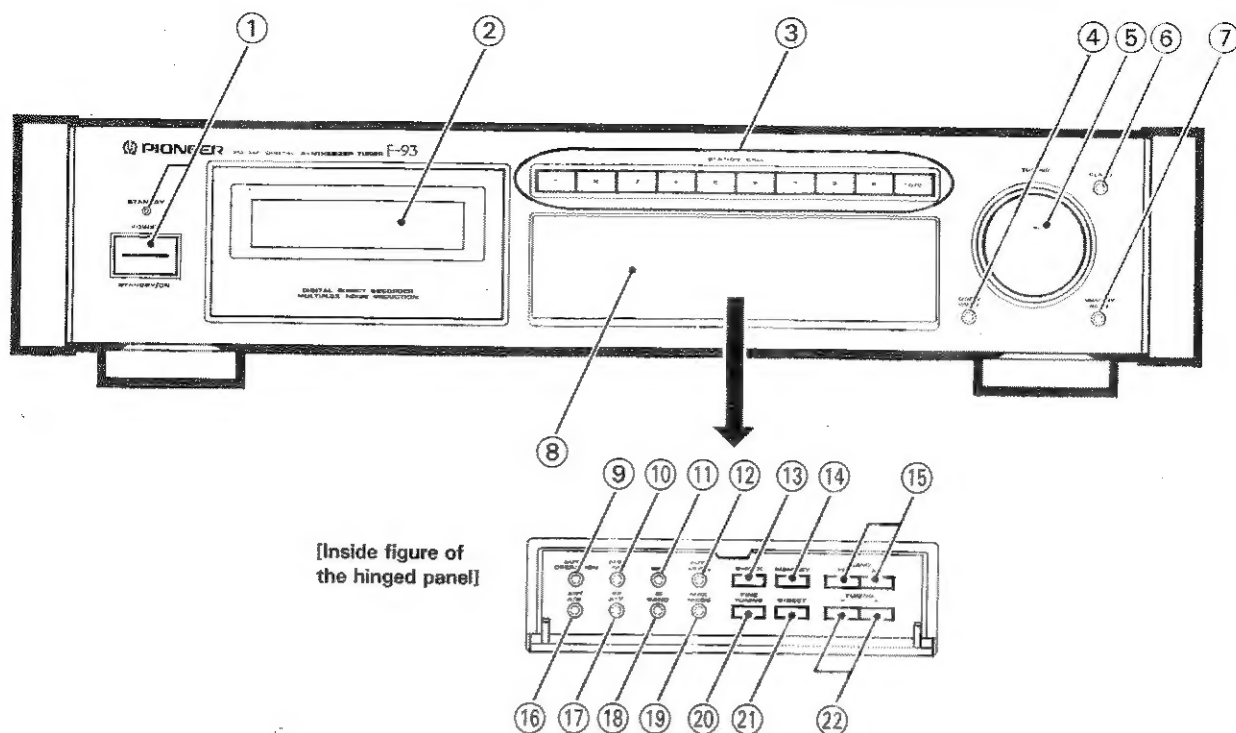
[Inside figure of the hinged panel]

① POWER STANDBY/ON switch/indicator

This is the switch for electric power.

ON: When set to the ON position, power is supplied and the unit becomes operational.

STANDBY: When set to STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.

The STANDBY indicator lights when the power is STANDBY, and goes out during ON.

NOTE:
* *As long as the power cord is connected to the outlet, the memory continues to be protected.*
* *If the power cord is unplugged, the memory will be retained for several days.*

② Operation display

See page 10.

③ STATION CALL buttons

Use these buttons to preset stations and to receive already preset stations.
They are also used when performing direct access tuning.

④ DOOR OPEN button

Use to open the hinged panel door.

⑤ TUNING knob

Use for manual tuning. To raise the frequency, turn in a clockwise direction: to lower the frequency, turn counterclockwise.

⑥ CLASS button

Use to switch between preset memory classes 1 to 4. In each class, one station can be memorized in each of the 1 to 10 STATION CALL buttons, enabling a total of 40 stations to be memorized.

⑦ MEMORY SCAN button

Press to receive currently selected class and preset stations for a few seconds in sequence. Press again and reception of the station presently being received will continue.

⑧ Hinged panel door

[INSIDE THE HINGED PANEL]

⑨ AUTO OPERATION button

Press this button, and the unit automatically switches between the following modes to find the one for optimum reception.
* RF ATT (10/15/20/0)
* ANT A/B
* IF BAND (NORMAL/SUPER NARROW)
* MPX NR (ON/OFF)
* MPX MODE (AUTO/MONO)
Automatically switches to mono in case of interference.
Muting turns on automatically if signal is weak.

⑩ MPX NR button

When MPX NR is on, MPX NR indicator lights up.
During reception of stereo broadcasts where the signal is weak, set this to ON if noise is a problem. Noise will be suppressed and sound quality will become clearer.

NOTE:
* *If MPX NR is turned on during FM reception, the MPX MODE automatically switches to AUTO.*
* *This button's status is preset for each station in station memory.*
* *This does not operate during AM signal reception or when the broadcast is monaural.*

⑪ SSS button

When SSS is on, SSS indicator lights. If turned on during reception of AM or when during reception of a manaural broadcast, this will produce a simulated stereo effect which provides rich ambience.
SSS: Spectrum Simulated Stereo.

NOTE:
* *If SSS is turned on during FM reception, the MPX MODE automatically switches to MONO.*
* *This button's status is preset for each station in station memory.*

⑫ AUTO LEVEL button (see page 11)

This lets you select from among six signal threshold levels, to determine the received signal level above which Auto Tuning will detect a station and stop. The Signal indicator and Station/Signal display indicate the set level. If the station's signal level is lower than the set threshold level, tuning will not stop at that station. Press once and the current level is displayed. Each subsequent time the button is pressed, the level changes in order.

⑬ S-MPX button

Switch ON when adjacent stations interfere with FM stereo reception even when the IF BAND is in the SUPER NARROW position. Switching this on also automatically selects the SUPER NARROW IF BAND, and AUTO MPX MODE.

NOTE:
* *S-MPX only operates during FM stereo reception.*
* *The setting of this button is memorized together with the station in the station presets.*

⑭ MEMORY button

Press to memorize preset stations. The MEMORY indicator will remain lit for several seconds. While the indicator is lit, select the class you want to memorize with the CLASS button, and press the STATION CALL button (1 through 10/0) you want to memorize.

⑮ BAND selector buttons

FM:
Press to receive FM broadcasts.
AM:
Press to receive AM broadcasts.

⑯ ANT A/B button

Selects between two antennas connected to the FM antenna A and B terminals. ANT- A or ANT- B indicator lights up.

NOTE:
This button's status is preset for each station in station memory.

⑰ RF ATT button

Use when FM reception is too strong, resulting in a distorted sound. The RF ATT indicator lights, and the set attenuator level is indicated in the station/signal display. Press once and the current level is displayed. Each subsequent time the button is pressed, the level changes in the following order:

```
┌─→ 10 dB ──→ 15 dB ──→ 20 dB ──→ 0 dB (RF ATT OFF) ─┐
└────────────────────────────────────────────────────┘
```

Normally, this button should be set to 0.

NOTE:
This button's status is preset for each station in station memory.

⑱ IF BAND button

Each time this button is pressed the bandwidth of the IF circuit switches between "normal" and "super narrow" for the FM band and the AM band.
The selected bandwidth is displayed as follows:
The NORMAL or SUPER NARROW indicator lights up.
Set to SUPER NARROW in case of interference from other stations.

NOTE:
The setting of this button is memorized together with the station in the station memory.

⑲ MPX (multiplex) MODE button

Mode changes as follows each time this button is pressed:

```
┌──────→ AUTO ───────── MONO ───────┐
└───────────────────────────────────┘
```

This button does not affect AM reception.
• **AUTO:**
AUTO indicator lights up.
Depending on the broadcast station, STEREO or MONO is automatically selected.
STEREO indicator lights up when a FM stereo broadcast is received.

NOTE:
When the signal level is too weak for reception, sound output is automatically muted.

• **MONO:**
MONO indicator lights up.
To receive stereo broadcasts in monaural.
If there is a lot of noise during stereo reception of a weak signal, you can reduce the level of noise by switching to MONO.

NOTE:
The setting of this button is memorized together with the station in the station memory.

⑳ FINE TUNING button

Use this when sound is distorted owing to radio interference even though you are tuned to your desired frequency. When FINE TUNING is operating, the FINE indicator lights.
During FM reception, the frequency is changed in 10 kHz steps. (When FINE TUNING is off, it changes in 50 kHz or 100 kHz steps.)
By changing the frequency slightly with the TUNING (+, -) button, noise caused by interference can be minimized.

NOTE:
* *When FINE TUNING is on and no station is being received, muting is applied automatically to prevent noise. Muting is not applied when a station is received, even if there is much noise and interference.*
* *Stations tuned using FINE TUNING can be preset.*

㉑ DIRECT button

When this button is pressed, the STATION CALL buttons function as ten-key number buttons for direct input of the desired reception frequency.
When FINE TUNING is on during FM reception, frequencies can be specified in 10 kHz steps. If FINE TUNING is off, frequencies can be specified in 50 kHz or 100 kHz steps.
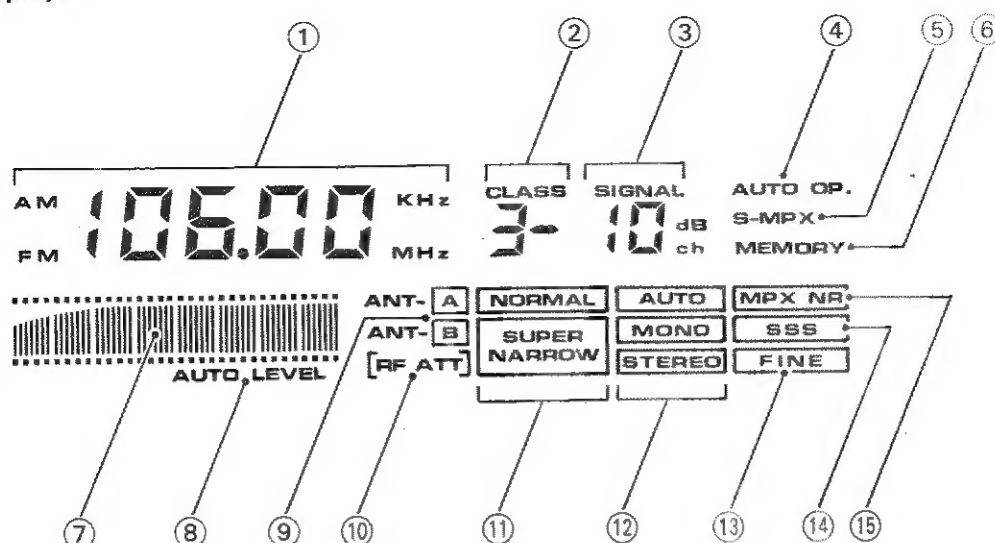
㉒ TUNING (+, -) buttons

If you press and immediately release the button, the frequency changes a step at a time. If you keep the button depressed for a few moments before releasing it, then auto-tuning operates and stops at the first station received.
You can set the signal level you want to be regarded as a station with the AUTO LEVEL button.

[Operation display]

① Frequency indicator

shows reception band and frequency.

② CLASS indicator

Shows preset memory class 1–4.

③ SIGNAL level/STATION No./RF ATT level/AUTO LEVEL indicator.

- After performing Manual tuning, Auto tuning, or Direct tuning, "SIGNAL" lights, and signal strength is displayed.
- When recalling a station preset in a STATION CALL button, STATION is displayed. If you press the STATION CALL button of the recalled station once more, "SIGNAL" lights, and the received signal strength is displayed for several seconds.
- During RF ATT operation, the attenuation level is displayed for several seconds.
- When setting AUTO LEVEL, the auto stop level is displayed for several seconds.

④ AUTO OP. indicator

This lights when AUTO OPERATION is operating.

⑤ S-MPX indicator

This lights when S-MPX is ON.

⑥ MEMORY indicator

Lights for a several seconds when MEMORY button is pressed.

⑦ Signal indicator

When setting AUTO LEVEL, the reception level step is displayed.

⑧ AUTO LEVEL indicator

This lights when setting AUTO LEVEL.

⑨ ANT- A , ANT- B indicators

These indicate the selected antenna.

⑩ RF ATT indicator

Lights when RF ATT of 10 dB, 15 dB, or 20 dB has been selected.

⑪ NORMAL, SUPER NARROW indicators

These indicate the selected IF BAND mode.

⑫ AUTO, MONO, STEREO, indicators

AUTO/MONO: Indicates the selected MPX mode.
STEREO: When the MPX mode is switched to AUTO, this lights when an FM stereo broadcast is received.

⑬ FINE indicator

This lights when the FINE TUNING button is pressed to change the frequency in 10 kHz steps during FM reception.

⑭ SSS indicator

This lights when SSS (Spectrum Simulated Stereo) is ON.

⑮ MPX NR indicator

This indicator lights when the MPX NR is operating.

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LISTENING TO BROADCASTS

LISTENING TO FM OR AM BROADCASTS

1. Turn POWER switch ON.

2. Press the desired BAND selector button.

• For FM broadcasts, the "FM" and "MHz" indicators will light.

$$\text{FM} \quad 106.00 \quad \text{MHz}$$

• For AM broadcasts, the "AM" and "kHz" indicators will light.

$$\text{AM} \quad 1008 \quad \text{KHz}$$

3. When listening to an FM broadcast, select the desired antenna with the ANT-A/B button.

• When using only a single antenna connected to either ANTENNA A or B, select the one connected to the antenna.

4. Tuning into the frequency of a desired station

[Manual tuning]
• Tune into the desired frequency with the TUNING knob. To raise the frequency, turn clockwise: to lower the frequency, turn counter-clockwise.
• The frequency changes one step each time you press and immediately release either one of the TUNING buttons located behind the hinged panel door.

[Auto tuning]
Press and hold either of the TUNING buttons located behind the hinged panel door; release when the frequency indication starts changing. The frequency display changes, and tuning automatically stops when a frequency that can be received is found.
+: Press to search for frequencies higher than the one displayed.
−: Press to search for frequencies lower than the one displayed.

5. To receive another station in the same band, repeat steps 3 and 4. To receive a station in the other band, repeat steps 2, 3 and 4.

Auto level during Auto tuning

During Auto tuning, signal levels regarded as stations where tuning stops can be set with the AUTO LEVEL button.
During Auto tuning operation, if tuning frequently stops, or fails to stops at a station, change AUTO LEVEL settings. When a station has a lower signal level than the setting, tuning will not stop.

	12 dBμ
	20 dBμ
	27 dBμ
	35 dBμ
	42 dBμ
	50 dBμ
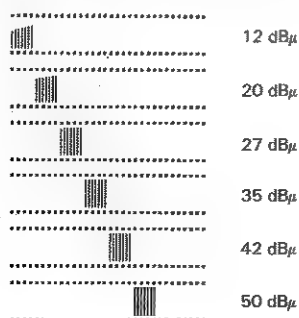
Signal Indicator

When no segment of the signal indicator is lit, reception is not possible even if the tuning frequency is correct. This is because the antenna terminal input is too weak. Check whether the antenna cable is firmly connected. If it is, consult your nearest dealer and install an outdoor antenna.

When there is interference and noise caused by neighboring stations

Press the IF BAND button to light the SUPER NARROW indicator, or press the S-MPX button to light the S-MPX indicator or perform FINE TUNING (see page 12).

When there is noise because FM reception is too strong

Press the RF ATT button to light the RF ATT indicator. Each time you press the RF ATT button, the attenuator level switches in the following order:

$$\longrightarrow 10 \text{ dB} \longrightarrow 15 \text{ dB} \longrightarrow 20 \text{ dB} \longrightarrow 0 \text{ dB (RF ATT OFF)} \longrightarrow$$

When there is a lot of noise during FM stereo broadcast reception

Press the MPX NR button to light the MPX NR indicator. If the level of noise is still too high, switch to monaural reception with the MPX MODE button to enjoy a clearer sound.

During monaural broadcasts and monaural reception

When receiving a monaural AM/FM broadcast, press the SSS button to light the SSS indicator, and you can enjoy the effect of simulated stereo.

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DIRECT ACCESS TUNING

When you know the frequency of the desired station, the frequency can be input directly using the STATION CALL buttons in the following way.

1. **Turn the POWER switch ON.**
2. **Press the desired BAND selector button.**
3. **When listening to an FM broadcast, select ANT-A or ANT-B.**
4. **Press the DIRECT button**
5. **Input the desired station frequency using the STATION CALL buttons.**

When FINE TUNING is on during FM reception, frequencies can be specified in 10 kHz steps. If FINE TUNING is off, frequencies can be specified in 50 kHz or 100 kHz steps.

To cancel frequency input
- If none of the STATION CALL buttons (1 though 0 (10/0)) is pressed for ■ period of appoximately five seconds, the unit returns to the state it was in before the DIRECT button was pressed.
- Pressing the DIRECT button again to cancel.
- Pressing any buttons other than 1 to 0 (10/0) will cancel this.

<Example> **To receive FM 106.00 MHz**
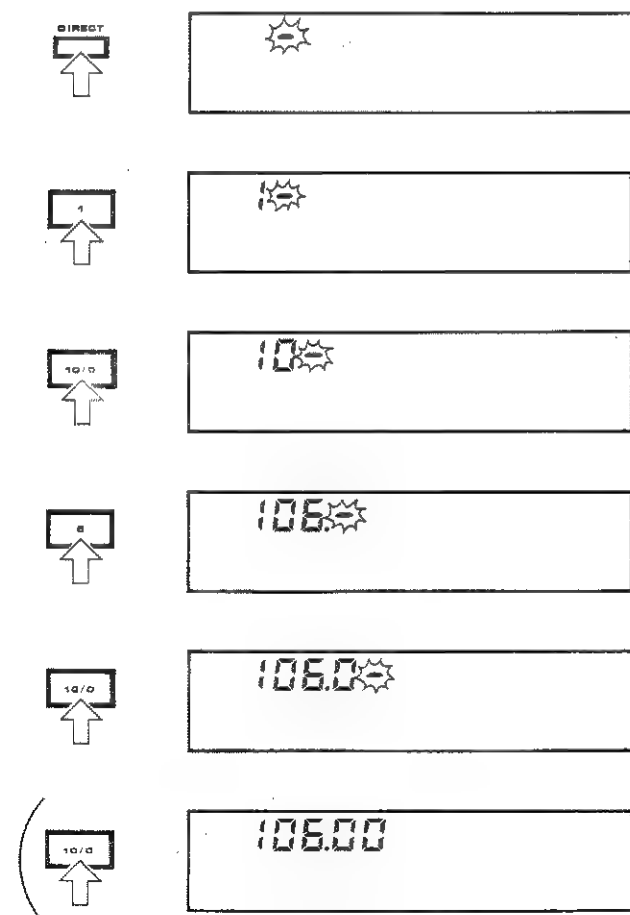
FINE TUNING

When there is ■ lot of radio interference even though you are tuned into the correct frequency, it is possible to minimize noise by changing the frequency slightly.

1. **Broadcast reception**
- Tune into a station using Manual tuning, Auto tuning, or Direct access tuning.

2. **Press the FINE TUNING button.**
- The FINE indicator lights in the operation display.

3. **Press the TUNING button to search for the point where noise is least, providing the best reception.**
- With fine tuning, the frequency changes in 10 kHz steps during FM reception.

NOTE:
- *When FINE TUNING is on and no station is being received, muting is applied automatically to prevent noise. Muting is not applied when ■ station is received, even if there is much noise and interference.*
- *Stations tuned using FINE TUNING can be preset.*

Perform this operation only on the U.K. model or multi-voltage model, with the CHANNEL STEP switch set to the 50 kHz position.

PRESETTING STATIONS

10 stations can be preset in each of the 4 classes, for a total of 40 station presets.

CLASS 1: 1 to 10 CH
CLASS 2: 1 to 10 CH
CLASS 3: 1 to 10 CH
CLASS 4: 1 to 10 CH

You can preset the following.
① Band and frequency
② RF ATT (FM)
③ IF BAND (FM, AM)
④ ANT-A/B (FM)
⑤ MPX MODE (FM)
⑥ MPX NR (FM)
⑦ SSS (FM, AM)
⑧ S-MPX (FM)
⑨ FINE (FM)

PRESETTING

1. Tune into a station, and preset ① to ⑨ above as desired.

2. Select the desired class (1 to 4) with the CLASS button.

3. Press the MEMORY button.
 • The MEMORY indicator will light for several seconds.
 • Memory storage is not possible once the indicator goes off. In this occurs, press the MEMORY button again.
 • If the button is pressed again while the indicator lit up, the memory function will be canceled.

4. While the MEMORY indicator is lit, press the desired STATION CALL button.
 • Pressing a STATION CALL button causes the MEMORY indicator to go out and the station to be preset.

5. Repeat procedures 1 to 4 to memorize other stations.

<Example> Presetting an FM 106.00 MHz station into class 3 with STATION No. (CH) 5.

Notes on Preset
 • If a station is memorized with STATION CALL buttons at a position where a station was already memorized, the previous contents are erased and the new data is stored in memory.
 • If preset stations get erased, repeat the preset procedure from the beginning.
 • If you press the CLASS button while the MEMORY indicator is lit, the CLASS indication will appear. Each additional press of the CLASS button will change the displayed CLASS.
 If you press the SATION CALL button at this point, the station will be preset in the selected class.

PRESET STATION TUNING

1. Select the class number with the CLASS button.
2. Press the STATION CALL button into which the desired station has been memorized.

NOTE:
 • *After calling a preset station, changing the contents of any of the presets ① — ⑨ will cause the "ch" indication to go out.*
 • *The contents of preset memory will be preserved for several days, even if the tuner's power cord is unplugged.*
 • *If a preset station has been erased, preset it again.*

Last station memory
 • When POWER switch is pressed to turn power on, the last station received before the power was turned off will be received again.
 • When the power is ON if one of BAND selector button is pressed, the last station received on that band will be received again.

STATION PRESET "MEMO"

It is recommended that you make a note of the preset stations.

STATION No.	1	2	3	4	5	6	7	8	9	10/0
CLASS 1										
CLASS 2										
CLASS 3										
CLASS 4										

TROUBLESHOOTING

Incorrect operations are often mistaken for trouble and malfunctions. If you think that there is something wrong with this component, check the points below. Sometimes the trouble may lie in another component. Investigate the other components and electrical appliances being used. If the trouble cannot be rectified even after exercising the checks listed below, ask your nearest PIONEER authorized service center or your dealer to carry out repair work.

Symptom	Cause	Remedy
No power	• Has the power cord been disconnected?	• Reconnect the power cord.
No sound.	• Have any of the output cords been disconnected or incorrectly connected? • Has the antenna been disconnected or is the connection loose? • During FM reception when an antenna is connected to only one of the ANTENNA jacks (A/B), the jack which is not connected with the ANT-A/B button is selected. • The Auto Level setting is too high.	• Connect them properly to the TUNER jacks on the amplifier. • Connect the antenna properly. • Select the jack connected to the antenna with the ANT-A/B button. • Lower the Auto Level setting
Station cannot be selected by the STATION CALL button.	• Was the power cord unplugged for several days? (Station memory has been lost.)	• Memorize the stations once again.
Noise	• Is the station properly tuned in to the correct frequency? • Has the antenna been disconnected or is the connection loose?	• Tune the station in correctly. • Connect the antenna properly.
Sound distortion.	[On the FM band] • The T-type FM antenna has not been extended, or it is not properly orientated. • Are the signals weak and reception poor? • Even though the signal is weak, the RF ATT button is ON. • Be sure not to select the wrong ANTENNA jack. • Static from other appliances (particularly automobiles) or multipath reflection (radio waves reflected off mountains and tall buildings, hence not received directly.) [On the AM band] • Poor positioning of AM loop antenna? • The supplied AM loop antenna is in contact with the unit. • Are the signals weak and reception poor? • Noise from other electrical appliances (fluorescent light/motors).	• Extend both ends fully, and face it in the direction giving best reception. • Replace the supplied FM T-type antenna with an outdoor antenna. • Set the MPX MODE button to MONO. (The broadcast will be received in monaural). • Set the RF ATT button to OFF. • Switch to the correct jack with the ANT-A/B button. • Try changing the antenna location. If you are using an outdoor antenna, move it away from the street. • Change antenna direction, and set it in the position giving best reception. • Move the loop antenna away from the unit. • Install and connect an external AM antenna and ground the unit. • Stop using the noise-generating equipment, or move it away.
FM stereo broadcasts not received in stereo.	• Antenna input is insufficient because of weak broadcast signals. • The unit is not correctly tuned to the frequency of the broadcast station. • MPX MODE button is set to MONO.	• Use a multi-element FM antenna. • Tune in the correct frequency. • Set MPX MODE button to AUTO.

Abnormal functioning of this unit may be caused by lightning, static electricity, or other external interference. To restore normal operation, turn the power off and then on again, or unplug the AC power cord and then plug it in again.

SPECIFICATIONS

FM Tuner Section

Frequency range .... 87.5 MHz to 108 MHz

Usable Sensitivity

NORMAL .... Mono: 11.2 dBf, IHF (1.0 μV/75 Ω)

50 dB Quieting Sensitivity

NORMAL .... Mono: 15.9 dBf, IHF (1.7 μV/75 Ω)

Stereo: 36.2 dBf, IHF (17.7 μV/75 Ω)

Sensitivity (DIN)

NORMAL .... Mono: 0.8 μV/75 Ω

Stereo: 26 μV/75 Ω

Signal-to-Noise Ratio .... Mono: 96 dB (at 80 dBf)

Stereo: 88 dB (at 80 dBf)

Signal-to-Noise Ratio (DIN) .... Mono: 76 dB

Stereo: 73 dB

Distortion (at 80 dBf)

NORMAL .... Mono: 0.03 % (1 kHz)

Stereo: 0.04 % (1 kHz)

SUPER NARROW .... Mono: 0.2 % (1 kHz)

Stereo: 0.25 % (1 kHz)

Capture Ratio

NORMAL .... 1 dB

Alternate Channel Selectivity

NORMAL .... 85 dB (400 kHz)

SUPER NARROW .... 85 dB (300 kHz)

Stereo Separation .... 60 dB (1 kHz)

50 dB (20 Hz to 10 kHz)

Frequency Response .... 20 Hz to 15 kHz ($^{+0.2}_{-0.8}$ dB)

Image Response Ratio .... 90 dB

IF Response Ratio .... 100 dB

AM Suppression Ratio .... 80 dB

Spurious Response Ratio .... 90 dB

Subcarrier Product Ratio .... 60 dB

Muting Threshold .... 23.2 dBf — 61.2 dBf (6 step)

Antenna Input .... 75 Ω unbalanced

AM Tuner Section

Frequency range .... 530 kHz to 1,700 kHz (Step 10 kHz)

531 kHz to 1,602 kHz (Step 9 kHz)

Sensitivity (IHF, Loop antenna) .... 150 μV/m

Selectivity .... 40 dB

Signal-to-Noise Ratio .... 50 dB

Image Response Ratio .... 40 dB

IF Response Ratio .... 60 dB

Antenna .... Loop Antenna

Audio Section

Output (Level/Impedance)

[FIXED]

FM (100% MOD) .... 1,000 mV/0.5 kΩ

AM (30% MOD) .... 220 mV/0.5 kΩ

[VARIABLE]

FM .... 1,200 mV MAX

AM .... 264 mV MAX

Miscellaneous

Power requirements

U.K. model .... a.c. 240 Volts ~, 50/60 Hz

U.S., Canadian models .... AC 120 V, 60 Hz

Multi-voltage model .... AC 110 V/120 — 127 V/220 V/240 V

(swithchable), 50/60 Hz

Power Consumption .... 30 W

Dimensions .... 457 (W) x 105 (H) x 352 (D) mm

18 (W) x 4-1/8 (H) x 13-7/8 (D) in

Weight (without package) .... 6.5 kg (14 lb 3 oz)

Furnished Parts

[U.K. model]

FM T-type Antenna 1

AM Loop Antenna 1

Connecting Cord with Pin Plugs 1

Operating Instructions 1

[Other destination models]

FM T-type Antenna 1

AM Loop Antenna 1

Connecting Cord with Pin Plugs 1

Control Cord with Pin Plugs 1

Antenna Adatpor (300 Ω — 75 Ω) 1

Operating Instructions 1

NOTE:

Specifications and design subject to possible modification without notice due to improvements.

MAINTENANCE OF EXTERNAL SURFACES

- Use a polishing cloth or dry cloth to wipe off dust and dirt.
- When the surfaces are very dirty, wipe with a soft cloth dipped in some neutral cleanser diluted five or six times with water, and wrung out well, and then wipe again with a dry cloth. Do not use furniture wax or cleaners.
- Never use thinners, benzine, insecticide sprays and other chemicals on or near this unit, since these will corrode the surfaces.

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